Simpler, Easier and Better Spine Care

Brian Justice, DC  Medical Director  Excellus BlueCross BlueShield
Spine Health

High cost and high frustration.

Gateway to opioids, chronic diseases and better health!

Back and neck pain are not diseases in search of a cure, but normal conditions of life that need to be managed.
A Mismatch in Spending: Health Care and Other Key Determinants of Health

Source: New England Health Care Institute

- 10% Access to Care
- 20% Genetics
- 20% Environment
- 50% Healthy Behavior
- 4% Other
- 88% Access to Care

$2.0 Trillion*

* Total US Personal Health Care Expenditure 2005
## Information outpaces implementation

| 17 years | **Average time for research evidence to reach clinical practice.**
|---|---|
| 182 studies | **Number of unique studies used to update the American College of Physicians Non-invasive Guidelines for Low Back Pain 2007 -2017.**

Purpose

• Reduce the spine burden on the Primary Care Physicians by offering a “simpler, easier and better spine care pathway”
  – Improve the value of spine services
  – Ensure appropriate spine services at appropriate times
  – Improve the quality of life for spine pain patients while decreasing inappropriate care
  – Save PCP time/resources
The problems of back pain
Learning to become comfortable with uncertainty

- Rash of opioid use, fusion surgery for DJD examples of our difficulty with uncertainty
- Failure of pathoanatomical model to define LBP
- LBP may be more of an impairment in coping and this is primary problem to address

Themes

- Spine pain is a bio-psycho-social condition
- Language of the provider(s) is critical with spine pain patients
- Passive care either supports or is a catalyst to active care with spine pain
- Simplicity

- Support with best evidence (CDC, AHRQ, ACP, MCMS..)
Spine Costs – Suffering and Dollars

- Low Back Pain lifetime prevalence – 84%
- 15% of patients have “severe disability”
- #1 cause of physical disability in United States and Internationally (WHO)
- World data – indirect costs 3-5 times direct costs
- Costs greater than ½ trillion dollars nationally
- Spine costs billions in Upstate New York
- 5% of patients account for 75% of the costs

Frymoyer JW, Cats-Baril WL. An overview of the incidences and cost of low back pain
What is the Intervention Really Worth?

Average Cost Accumulation Per Patient By Intervention

- Conservative
- Fusion
- Non-Fusion

Months Before and After Baseline Intervention

Excellus BCBS internal data
Evidence vs. Practice Patterns (University of Pittsburgh Study)

Baseline State of Spinal Pain Care
Care Pathways Create Efficiencies

Evidence → Technology → Data → Patients → Less Variation → Higher Quality → Lower Cost

Pathway support
- Access
- Incentives
- Communication

Excellus
Communication is key

Primary Care Physicians

Chiropractors

Physical Therapists

Pain Management

Surgeons

Hey!

Hay?
From parts to people

From pathoanatomical/reductionist to biopsychosocial / holistic

It's far more important to know what person the disease has than what disease the person has.

~ Hippocrates
Emerging Spine Concepts

- From pathoanatomical to biopsychosocial model
- From anatomical problem to whole person experience
- From a focus on pain to a focus on function / life
- Pain has emotional and cognitive components
- Chronic pain involves CNS dysfunction
- Treatment must focus on the whole person, not just the area of pain
- Recognize irrelevant abnormalities (imaging)
Filling the Gaps

• **Innovation**: optimizing workforce, guideline to pathway

• **Value** solution to simultaneously meet the needs of:
  – Patients (whom do they like, trust? Incentives?)
  – Providers (how do they communicate? Incentives?)
  – Employers (indirect costs 2-5 times direct costs)
  – Payer (simple, operational, non-disruptive)
  – Community (public health initiative)

• Creating **High Performing Networks** and Teams (change behavior without disruption)

• Creating foundation for **value based reimbursement** / shared risk / shared reward
‘First Touch’ Data

Conservative Spine Care: Opportunities to Improve the Quality and Value of Care

Thomas M. Kosloff, DC,1
David Elton, DC,2
Stephanie A. Shulman, DVM, MPH,3
Janice L. Clarke, RN,4
Alexis Skoufalos, EdD,4 and Amanda Solis, MS4

POPULATION HEALTH MANAGEMENT
Volume 0, Number 0, 2013
Which treatments or advice were helpful?

Based on a nationally representative Consumer Reports survey of back-pain sufferers who said they had consulted with the professional for advice or treatment.

<table>
<thead>
<tr>
<th>Professional</th>
<th>Helpful %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yoga or Tai Chi Instructor</td>
<td>89%</td>
</tr>
<tr>
<td>Massage Therapist</td>
<td>84%</td>
</tr>
<tr>
<td>Chiropractor</td>
<td>83%</td>
</tr>
<tr>
<td>Physical Therapist</td>
<td>75%</td>
</tr>
<tr>
<td>Neurosurgeon</td>
<td>67%</td>
</tr>
<tr>
<td>Acupuncturist</td>
<td>66%</td>
</tr>
<tr>
<td>Orthopedist or Orthopedic Surgeon</td>
<td>65%</td>
</tr>
<tr>
<td>Primary Care Doctor</td>
<td>64%</td>
</tr>
<tr>
<td>Rheumatologist</td>
<td>61%</td>
</tr>
</tbody>
</table>
Quality Through ‘Front End Efficiencies’

- Efficient Delivery Systems
  - Pathway-Trained Practitioner can be the “Hub of the Wheel”
  - “Feeder” Referral Pathways from ED, UC, PCPs, Medical Home, ACOs, Employer Groups
  - Standardize evaluation and management across provider groups and clinical settings (minimize variation)
  - Partnerships with high performing specialists across multiple disciplines: spine surgeons, pain specialists, neurology, mental health, PMR/physiatry

- Public Education Campaign – self triage (ED?), self care, prevention, “stay a person” (Hadler)
CMS has called for a “refitting” of the existing workforce.
The Excellus BlueCross BlueShield Spine Health Program

- Program Evolution (2009 . . . )
  - Beth-Israel Deaconess Hospital
  - Spine Care Partners, LLC Care pathway
    - Provider training
  - Licensing agreement with SCP and hired dedicated medical director Oct. 2012
  - Vetted and published

- Program Principles
  - Simple Solutions
    - Re-redefine spine pain
    - Engage patients
    - Biopsychosocial model
    - First touch, low tech
    - “Less is more”

Back and neck pain are not diseases in search of a cure, but normal conditions of life that need to be managed
Pathway + Trained Providers = Value

- Cross discipline evidence / reviewed locally / process driven / patient-centered
- Value = benefits (patient, community) / costs (episode, indirect)
- Quick information / evidence dissemination / data collection
- Providers bring individual patient context to pathway
  - Meaningful shared decision making
  - Motivational interviewing
  - Psychosocial screening
  - Minimize fear provoking language (DDD)
  - Patient preference matters
The Excellus BlueCross BlueShield Spine Health Program

• ‘First Touch’ Providers – Pathway training (500+ exposed to date)
  – Primary Care Practitioners (1-2 CME’s)
  – Primary Spine Practitioners (24-100 CME’s)
  – Decrease variation, improve communication

• Early risk identification
  – 5% spine patients account for 75% of cost; risk stratification (StarT Back)
  – Functional loss / psychosocial screen (PROMIS?)
  – Appropriate care early, triggers significant savings downstream (direct and indirect costs)

• Patient engagement (active, shared)
• Provider value quotient (benefit/cost)
• Culture change, aligning incentives
  – Employers
  – Hospitals, ACOs, providers
  – Patients and communities
  – Payers
Pathway that...

- Defines simple 'first touch' principles that minimize development of chronic disability
- Evaluates for rare instances of serious pathology
- Minimizes unnecessary testing
- Helps define roles among practitioners that are more condition/patient based and less based on broad specialist care
- Allows for coordination of patients bridging primary care/emergency care to specialty care
- Allows for specificity in treatment and referral based on agreed upon heterogeneous clinical presentation
- Identifies patients at high risk for long term chronic disabling pain reliably and efficiently and allows this to effectively influence management strategies

Does all of this cost effectively with VALUE in mind
Pathway Training Themes

- Spine pain is a bio-psycho-social condition
- Language of the provider(s) is critical with spine pain patients
- Shift from a focus on pain to a focus on function / life
- Passive care either supports or is a catalyst to active care with spine pain
- Simplicity
- Support with best evidence (CDC,AHRQ,ACP,MCMS..)
Mind-bending themes

• Stop calling it ‘Back Pain’
  ✓ The label triggers patient and provider focus
  ✓ Pain focus leads to passive (Rx) care
  ✓ Hypervigilent to treating the pain

• Primary objective in treating an acute spine related disorder is to prevent chronicity
  ✓ Triggers self-care / active-care discussion
  ✓ Needs a biopsychosocial construct
  ✓ Focus on management and quality of life
Right Patient

Right Provider

Right Time

- History Taking
- Examination
- Imaging
- Treatment
- Examples
Referring PCP Spine Algorithm

Pt presents to PCP with Spine Related Disorder
Rx and Ex by PCP

RED flags?

NO

EVP or Home Care
Management Criteria?

- Duration: ≤ 3 weeks
- Recurrent: ≤ 2 prior episodes
- Pain: ≤ 6
- Radicular: only proximal pain
- Muscle: normal
- Root Tension: normal
- 9-item questionnaire: ≤ 3

HOME CARE
- Reassurance
- Maintain ADL and work
- OTC meds
- Home Exercise
- If no change in 2 weeks, go to Primary Spine Practitioner (PSP) / pathway trained practitioner

YES

Send to ER or Medical Workup

- Duration
- Recurrent
- Work Status
- Pain Intensity
- Radicular Pain
- Deep Tendon Reflexes
- Muscle Strength
- Nerve Root Tension

R/S changes
- Permanant numbness
- Hx CA
- Unexplained weight loss
- Fever
- Trauma
- Osteopenia
- SE/CDH, etc.

IF ANY PRESENT:
- Duration: ≤ 3 weeks
- Recurrent: ≥ 3 prior episodes
- Work: not working
- Pain: ≥ 7
- Radicular: distal pain, radicular pattern
- DTR: abnormal
- Muscle weakness
- Root Tension: radiating pain
- 9-item questionnaire: ≥ 4

Referral to Primary Spine Practitioner (PSP) / pathway trained practitioner (chiropractor or physical therapist w/ spine training)
## Pathway Training Survey Results

<table>
<thead>
<tr>
<th>Question</th>
<th>strongly disagree</th>
<th>mildly disagree</th>
<th>neutral</th>
<th>mildly agree</th>
<th>strongly agree</th>
<th>% of agree responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>The material presented strongly supported the course objective(s).</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>11</td>
<td>100%</td>
</tr>
<tr>
<td>The material was presented in an organized, easily assimilated manner.</td>
<td>1</td>
<td>3</td>
<td></td>
<td>11</td>
<td></td>
<td>93%</td>
</tr>
<tr>
<td>The instructor's teaching style was interesting and facilitated learning of the material.</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>11</td>
<td></td>
<td>87%</td>
</tr>
<tr>
<td>The instructor presented relevant material that I can begin using in my office on Monday morning.</td>
<td>1</td>
<td>1</td>
<td></td>
<td>13</td>
<td></td>
<td>87%</td>
</tr>
</tbody>
</table>

Survey of 15 participants in April 2018 training at Bassett Healthcare
Expectations Influence Recovery

Activity Disengagement

Continuation of Activity

Pain confrontation

Depression

Negative Expectation Cycle

Catastrophizing

Fear-avoidance

Self-efficacy

Active coping

Modified Fear avoidance model (Vlaeyen & Linton, 2000)

Self-efficacy model (Bandura, 1977)

Slide used with permission from: Sherri Weiser NYU School of Medicine
Risk Factors for Chronicity

- Previous history of low back pain
- Total work loss (due to low back pain) in past twelve months
- Radiating leg pain
- Reduced straight leg raising
- Signs of nerve root involvement
- Reduced trunk muscle strength and endurance
- Poor physical fitness
- Self-rated health poor
- Heavy smoking
- Psychological distress and depressive symptoms
- Disproportionate illness behavior
- Low job satisfaction
- Personal problems - alcohol, marital, financial
- Adversarial medico-legal proceedings
StarT Back 9-item Questionnaire

- Disability (function)
- Catastrophizing
- Fear (anxiety)
- Depression
- Risk of Chronicity
- Function
The STarT Back Tool Scoring System

Total score

3 or less
- Low risk

4 or more
- Sub score Q5-9
  - 3 or less
    - Medium risk
  - 4 or more
    - High risk

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Funded by Arthritis Research UK
Cultivating Change Talk

- Explore the patient’s own *ambivalence*
- Have the patient explore challenges and benefits; pros and cons
- Encourage self-efficacy
- Over 200 RCTs on MI *exclusion of populations which bias results*
3 Minute Exam: *Focus on Neuro*

- Look, Touch, Move, Ask
- Motor Screen
- Deep Tendon Reflex
- Sensory Screen (situational)
- Nerve Tension Screen
- Upper Motor Screen (upper extremity and lower extremity if neck or upper ext.)
Imaging Findings of Questionable Clinical Significance

- Disc bulge
- Disc degeneration
- Disc signal loss
- Disc dessication
- Spondylosis
- Facet arthrosis
- Arthritis

"Iatrogenic Imaging Disability"
Choosing Wisely

Don’t do imaging for low back pain within the first six weeks, unless red flags are present.

Or

Don’t obtain imaging studies in patients with non-specific low back pain.

- American Academy of Family Physicians
- American College of Physicians
- American College of Occupational & Environmental Medicine
- North American Spine Society
- American Association of Neurological Surgeons
Imaging may trigger worse outcomes

• Randomized controlled trial:
  - plain film imaging for back pain versus no imaging
  - MRI for back pain versus no imaging.

• Results - The group receiving imaging had:
  - no better outcomes
  - scored lower on self-perceived health status
  - demonstrated a higher likelihood of persistent pain
  - utilized higher number of office visits

Chou R, Deyo Imaging strategies for low back pain: systematic review and meta analysis
Objective:

- To determine the effect of early (receipt < 30 d post onset) magnetic resonance imaging (MRI) on disability and medical cost outcomes

Results:

- 37% of the nonspecific LBP and 80% of the radiculopathy cases received early MRI. The early-MRI groups had similar outcomes regardless of radiculopathy status: more disability, on average $13,000 higher medical costs than the no-MRI groups.

Conclusion:

- Early MRI without indication has a strong iatrogenic effect in acute LBP, regardless of radiculopathy status. Providers and patients should be made aware than when early MRI is not indicated, it provides no benefits, and worse outcomes are likely.
### Age-specific prevalence estimates of degenerative spine imaging finding in asymptomatic patients

<table>
<thead>
<tr>
<th>Imaging Finding</th>
<th>Age (yr)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Disk degeneration</td>
<td>37%</td>
<td>52%</td>
</tr>
<tr>
<td>Disk bulge</td>
<td>30%</td>
<td>40%</td>
</tr>
<tr>
<td>Disk protrusion</td>
<td>29%</td>
<td>31%</td>
</tr>
<tr>
<td>Facet degeneration</td>
<td>4%</td>
<td>9%</td>
</tr>
<tr>
<td>Spondylolisthesis</td>
<td>3%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Brinjikji, Deyo, et al AJNR 2014
Many times the changes seen on an MRI report are normal findings for a healthy aging spine. The following findings in symptom free patients are so common that they must be interpreted with caution and in appropriate clinical context.

<table>
<thead>
<tr>
<th>Among patients in the following age groups who are asymptomatic, a lumbar spine MRI will find about…</th>
<th>20-30 years old</th>
<th>30-40 years old</th>
<th>40-50 years old</th>
<th>50-60 years old</th>
<th>60-70 years old</th>
<th>70-80 years old</th>
<th>80+ years old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disc Degeneration</td>
<td>37%</td>
<td>52%</td>
<td>68%</td>
<td>80%</td>
<td>88%</td>
<td>93%</td>
<td>96%</td>
</tr>
<tr>
<td>Disc Signal Loss</td>
<td>17%</td>
<td>33%</td>
<td>54%</td>
<td>73%</td>
<td>86%</td>
<td>94%</td>
<td>97%</td>
</tr>
<tr>
<td>Disc Height Loss</td>
<td>24%</td>
<td>34%</td>
<td>45%</td>
<td>56%</td>
<td>67%</td>
<td>76%</td>
<td>76%</td>
</tr>
<tr>
<td>Disc Bulge</td>
<td>30%</td>
<td>40%</td>
<td>50%</td>
<td>60%</td>
<td>69%</td>
<td>77%</td>
<td>84%</td>
</tr>
<tr>
<td>Disc Protrusion</td>
<td>29%</td>
<td>31%</td>
<td>33%</td>
<td>36%</td>
<td>38%</td>
<td>40%</td>
<td>43%</td>
</tr>
<tr>
<td>Annular Fissure</td>
<td>19%</td>
<td>20%</td>
<td>22%</td>
<td>23%</td>
<td>25%</td>
<td>27%</td>
<td>29%</td>
</tr>
<tr>
<td>Facet Degeneration</td>
<td>4%</td>
<td>9%</td>
<td>18%</td>
<td>32%</td>
<td>50%</td>
<td>69%</td>
<td>83%</td>
</tr>
<tr>
<td>Spondylolisthesis</td>
<td>3%</td>
<td>5%</td>
<td>8%</td>
<td>14%</td>
<td>23%</td>
<td>35%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Reference:
## Outcomes of Statement and Nonstatement Groups

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Statement Group (n = 71)</th>
<th>Nonstatement Group (n = 166)</th>
<th>Odds Ratio*</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-sectional reimaging</td>
<td>1 (1)</td>
<td>12 (7)</td>
<td>0.22 (0.03, 1.67)</td>
<td>.14</td>
</tr>
<tr>
<td>Narcotics prescription</td>
<td>5 (7)</td>
<td>37 (22)</td>
<td>0.29 (0.11, 0.77)</td>
<td>.01</td>
</tr>
<tr>
<td>Physical therapy</td>
<td>17 (24)</td>
<td>60 (36)</td>
<td>0.55 (0.29, 1.03)</td>
<td>.06</td>
</tr>
<tr>
<td>Steroid injection</td>
<td>11 (15)</td>
<td>22 (13)</td>
<td>1.37 (0.61, 3.05)</td>
<td>.44</td>
</tr>
<tr>
<td>Surgical consultation</td>
<td>20 (28)</td>
<td>58 (35)</td>
<td>0.86 (0.45, 1.66)</td>
<td>.67</td>
</tr>
<tr>
<td>Surgery</td>
<td>4 (6)</td>
<td>11 (7)</td>
<td>1.09 (0.32, 3.72)</td>
<td>.89</td>
</tr>
</tbody>
</table>

Note.—Unless otherwise indicated, data are numbers of patients, with percentages in parentheses.

* Odds ratio represents comparison of statement and nonstatement groups, while controlling for severity of MR imaging findings. Data in parentheses are 95% confidence intervals.
Imaging needs context

“More than 50% of the patients indicated that they would undergo spine surgery based on abnormalities found on MRI, even without symptoms”

Patient misconceptions concerning lumbar spondylosis diagnosis and treatment, Franz, Neurosurg Spine 2015
DEGENERATIVE SKIN DISEASE!
DEGENERATIVE HAIR DISEASE!
Language

“Words are, of course, the most powerful drug used by mankind”

- Rudyard Kipling
Royal College of Surgeons, 1923
The Enduring Impact of What Clinicians Say to People With Low Back Pain — Darlow, An Fam Med Nov 2013

- Information and advice received at consultation can continue to influence patient beliefs for many years.
- Identify messages that may be interpreted negatively and instill the confidence to deliver positive messages instead.
- Clear activity advice and appropriate reassurance can be empowering.
- Packaging information and advice that enables people to use their back freely, potentially reducing the persistence of disability.
Setting the Stage - *What you say often has more impact than what you do* –

- Severe pain does NOT indicate a catastrophic event
- Very rarely does spine pain truly need emergent care
- Important to get the patient to relax with their pain. (Increased anxiety/fear creates more perceived pain)
- Use positive language re: expectation for recovery
- Keep it simple when possible: activity, heat/ice, OTCs
- Manage, not cure
Adopting a Helpful Lexicon

• Avoid complicated/complex medical terminology when possible.

• Verbalize that you have ruled out any underlying serious pathology.

• Be calm, confident, positive and empathetic.
  – Physician attitudes and beliefs correlate with patient attitudes and beliefs and therefore clinical outcomes.

• Encourage staying active and that their pain does NOT mean they are doing more damage.
  – Pain Neuroscience Education
## Bio medically-Based Communication

<table>
<thead>
<tr>
<th>What you say:</th>
<th>What the patient hears:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your MRI shows degenerative changes/disc herniation/arthritis</td>
<td>I will never get better</td>
</tr>
<tr>
<td>There’s nothing wrong with your back</td>
<td>He/she thinks It’s all in my head</td>
</tr>
<tr>
<td>Stop when you feel pain</td>
<td>Activity will harm my back</td>
</tr>
<tr>
<td>Take it easy and rest</td>
<td>I should stay in bed</td>
</tr>
<tr>
<td>If chiropractic or physical therapy doesn’t work you may need surgery</td>
<td>I will need surgery</td>
</tr>
<tr>
<td>You should be able to work</td>
<td>He/she thinks I am faking</td>
</tr>
<tr>
<td>Pain is normal for someone your age</td>
<td>I’m going to get worse</td>
</tr>
</tbody>
</table>

Slide used with permission from: Sherri Weiser NYU School of Medicine
# Psychologically-Based Communication

<table>
<thead>
<tr>
<th>What you say</th>
<th>What the patient hears</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your MRI doesn’t show anything to worry about</td>
<td>There is nothing seriously wrong with my back</td>
</tr>
<tr>
<td>The cause of your pain may not show up on an MRI</td>
<td>My pain is real</td>
</tr>
<tr>
<td>You should increase activity as tolerated</td>
<td>Activity is good for me</td>
</tr>
<tr>
<td>Your back problem should respond to chiropractic or physical therapy</td>
<td>I probably won’t need surgery</td>
</tr>
<tr>
<td>Working will not cause damage to your back</td>
<td>I will be able to return to work</td>
</tr>
<tr>
<td>There are many things you can do on your own to control your pain</td>
<td>I can learn to handle my pain</td>
</tr>
</tbody>
</table>

Slide used with permission from: Sherri Weiser NYU School of Medicine
ACP Guideline for acute, subacute, chronic LBP

Annals Int Med 2017, Qaseem A, et al

Recommendation #1

- Given that most patients with acute or sub acute low back pain improve over time regardless of treatment, clinicians and patients should select non-pharmacologic treatment with superficial heat (moderate-quality evidence), massage, acupuncture, or spinal manipulation (low-quality evidence). If pharmacologic treatment is desired, clinicians and patients should select non-steroidal anti-inflammatory drugs or skeletal muscle relaxants (moderate-quality evidence).

(Grade: strong recommendation)
Shift from Passive to Active Care

- ACP
- CDC
- AHRQ
- JACHO
- NIH
Mindful practice

- Being “present” serves both the patient (demonstrates caring) and the physician (provides meaning to clinical practice)
- In a typical PCP office visit the physician interrupts the patient within 18 seconds of asking a question
- Physicians are trained/driven to explain, fix, advise when listening and empathizing may help the patient more (60% of patients misunderstood directions after an office visit with the PCP)

Verghese, A. Health Affairs 2016
Back Pain linked to psychological disorders

– What is perpetuating this pain and suffering experience?

– Acute and chronic back pain are linked to
  • Depression
  • Psychosis
  • Anxiety
  • Stress
  • Sleep disorders

Stubbs B, General Hospital Psychiatry 2016
What is perpetuating this pain and suffering experience?

The “Psych Big 5”

• Fear
• Catastrophizing
• Passive Coping
• Poor self-efficacy
• Depression
The Neuro matrix
(Melzak R. Pain 1999; S6:121-126)

A combination of centers in the brain that act together in producing the pain experience.
Nervous System Sensitization
The good and bad of Neuroplasticity

.... “neurons that fire together, wire together”

Our brain loves patterns

Emotions, touch, sight, smell...can all trigger or amplify a pain experience

....or lessen a suffering experience
The Role of Beliefs in Chronic Spinal Pain

- Patient experiences pain, then...
- Patient forms a belief (judgment) about the pain, then...
- Patient forms an emotional response based on this belief, then...
- Patient engages in behavior consistent with this belief and emotional response
Challenges: 
*Chronic Pain is “Biopsychosocial”*

Pain Not Simple Linear System

**Psychological**
- Attitudes and Beliefs
- Distress and Depression
- Illness Behavior
- Social Environment

**Physiological**
- Peripheral Sensitization
- Central Sensitisation
Seeking Pain Relief Increases Pain!!

Attempts to control pain prioritize attention towards signals of pain: an experimental study. Notebaert, Pain 2011

Seeking relief of pain in lieu of improved function actually increases pain by facilitative hypervigilance for pain.

YOU MUST TAKE AN ACTIVE ROLE IN TREATING YOUR PAIN!
Heightened Pain Response

- Nonorganic signs: distraction and simulation are best
  - raise the leg up to check the ankle reflex, later do a SLR and tell the patient “I want you to tell me if this hurts”.
  - standing rotation test: rotate the trunk as a unit and ask if it hurts
  - non anatomical distribution of pain to light touch

RTW? - provide a work note for a couple of days and tell them “if you are still not sure if you can return at that point, you need to see a PSP or occ med group”.
Medications.............opiates

(Passive care only to catalyze active care)
Common pain conditions that are almost never indicated for opioids

- Fibromyalgia
- Headache
- Self-limited illness, i.e., sore throat
- Uncomplicated back and neck pain
- Uncomplicated musculoskeletal pain

Scientific Evidence?
The Effectiveness and Risks of Long-Term Opioid Treatment of Chronic Pain

Agency for Healthcare Research and Quality (AHRQ) Feb 2016

- >4200 studies
- No study evaluated effects of long-term opioid therapy versus no opioid therapy

Noninvasive Treatments for Low Back Pain

- Strong opioids verses placebo: “The clinical magnitude of effects was small, typically equivalent to about **1 point on a 0-10 pain scale.**”
‘High Impact Chronic Pain’ (HICP)

- 2011 IOM report: 40% US adults have chronic pain
- Chronic pain defined only by duration of pain

- Two recent studies on HICP: How often do you have pain and how often did pain limit your work or life activities?
- 20% US adults have chronic pain
- 8% have HICP, with increase prevalence with advancing age

Dahlhamer, Morbidity and Mortality Weekly, 2018
Pitcher, The Journal of Pain, 2018
‘High Impact Chronic Pain’ (HICP)

- The definition, the language, impact the research and treatment approaches
- Brings function and quality of life into the discussion
- Shifts the focus to active care

- Changes treatment focus from pain management to life management
- Treatment example: CBT and graduated activity
Parsing and Treating right patient, right provider, right time

PCP

- Red Flags:
  - if + refer condition as always...
  - but no red flags, no imaging
- Yellow flags
  - (psychosocial tool): if + refer to spine program
- Focused and meaningful history/exam
- If + for neuro or leg/arm pain, refer to pathway trained spine provider
- If all the above negative: exercise, NSAIDS/ACET? and keep active

<table>
<thead>
<tr>
<th>Strong Evidence</th>
<th>Fair Evidence</th>
</tr>
</thead>
</table>
| **Acute LBP**   | • Pharmaceuticals  
| • Early gradual activity  
| • Discourage bed rest  
| • Recognize psychosocial factors | • Manipulation |
| **Chronic LBP** | • Pharmaceuticals  
| • Supervised exercise  
| • Cognitive behavioral therapy  
| • Multidisciplinary treatment | • Manipulation |
Worth mentioning: Motivational Interviewing and Cognitive Behavioral Therapy

• Key is to **contextualize** care pathway to the patient through the principles of MI and CBT
• Peer conversation
• Compassionate and accepting dialogue
• Evoke from the patient skills they already possess
• Ask the patient to tell you what the benefits of the change would be
Worth mentioning:

Radiculopathy: Recommended Treatment

Acute: NSAID, Oral steroid, ESI

Chronic: Neural mobilization
Bruegger’s Stretch
The “Social”

- *Job satisfaction*
- Home life
- Social interaction
- Relationships
Worth Mentioning: Essential Messages for Everyone

- *Overcoming vs getting rid of; manage vs cure*

- Activity is good

- Avoiding activity that is detrimental

- LBP is a very painful inconvenience that nearly everyone can overcome

- Initial visit therapy is an active therapy so that pt’s first experience of relief is something that they do
Pain Self-Management Strategies

- Ease Tension
- Pace Activities
- Use Medications Appropriately
- Improve Mood
- Think Constructively
- Socialize/Recreate
- Shift Focus
- Improve Sleep
- Move/Exercise
- Use Good Ergonomics

Consume Wisely, UC Davis Medical Center
Worth Mentioning: High patient satisfaction when you:

- Palpate area of pain (touch the patient)
- Give a diagnosis: ‘mechanical back pain’ is OK (better than ‘non-specific back pain’)
- Contextualize cognitive behavioral therapy (reassurance that: intense pain is usually short lived, that bad pain does not mean bad disease, rarely needs further testing, safe to move, we can help you)
- Education recommendations
- Referral is appropriate
The establishment of a primary spine care practitioner and its benefits to health care reform in the United States

Donald R Murphy², Brian D Justice³, Ian C Paskowski⁴, Stephen M Perle⁵ and Michael J Schneider⁶

Abstract

It is widely recognized that the dramatic increase in health care costs in the United States has not led to a corresponding improvement in the health care experience of patients or the clinical outcomes of medical care. In no area of medicine is this more true than in the area of spine related disorders (SRDs). Costs of medical care for SRDs have skyrocketed in recent years. Despite this, there is no evidence of improvement in the quality of this care. In fact, disability related to SRDs is on the rise. We argue that one of the key solutions to this is for the health care system to have a group of practitioners who are trained to function as primary care practitioners for the spine. We explain the reasons we think a primary spine care practitioner would be beneficial to patients, the health care system and society, some of the obstacles that will need to be overcome in establishing a primary spine care specialty and the ways in which these obstacles can be overcome.

Keywords: Low Back Pain, Neck Pain, Health Care Reform, Primary Care, Health Policy
Primary Spine Practitioner - *aka PSP*  
*(trusted non-surgical spine specialist)*

- Degree Agnostic (MD, DO, DC, PT, NP, PA...):
- Assist in Coordination of Spine Related Care
- Evidence Based Approaches in Hx, Px, and Tx
- Accurate / Quick Triage for Imaging, Surgical and Pain Intervention Consults (‘Fast Track’)
- Emphasis on Self Directed Care
- Knowledge of manipulation and exercise, appropriate use of opioids and steroids, full spectrum Dx/Rx options to effectively and efficiently coordinate care
- Promote a Public Health Perspective for Spine Care
Primary Spine Practitioner aka PSP approach

- Red Flags

- Exam: Causal Mechanisms, Treatment Response

- Perpetuating Factors/Yellow Flags
  - Stratified Care

- Refer to Fast Track as Spine Community has Agreed To

- Treat without Additional Referral ~ 70 - 80%

- Manage/Co-manage All Spine Cases (Musculoskeletal Only)
Spinal Pain Patient

Visceral/Red Flag?

Pain Source?

Centralization signs?

Disc Derangement 41%

Lumbar Dysfunction 23%

SI Dysfunction 27%

Radiculopathy 24%

Neurodynamic signs

AND/OR

Trigger Points 10%

Myofascial signs

Perpetuating Factors?

Segmental provocation signs

Dynamic Instability 63%

NSS 5%

Fear catastrophizing, passive coping, poor self-efficacy 46%

Special Tests/Referral 2.7%
Algorithm for osteopathic manipulative treatment (OMT) for low back pain (LBP) decision making.

1. Is somatic dysfunction the cause or a contributing factor in the presentation of LBP? (Look for "Red Flags").
   - Yes
     - Cause:
       - A. Define type of dysfunctional mechanics and as appropriate define the dysfunctional barrier.
       - B. Determine why the dysfunction is present (eg, articular, muscular, myofascial, neuroreflex, membranous).
     - C. Determine the patient's level of tolerance for OMT.
   - No
     - Identify cause of LBP and treat accordingly.
     - Contributing Factor: Identify primary cause of LBP and treat accordingly. Treat contributing somatic dysfunction using the same decision making as followed if the LBP is solely the result of somatic dysfunction.

2. Decide upon the type of OMT to most effectively address the cause of the dysfunction with consideration for patient tolerance.
3. Apply OMT to accomplish the desired response.
4. Reassess the dysfunction and determine if and when follow-up evaluation is necessary. Follow up, if appropriate, and repeat steps A-F.

J Am Osteopath Assoc 2010;110:653-666
## Core Components of Spine Health Program

<table>
<thead>
<tr>
<th>Process</th>
<th>Team of Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Systematic diagnosis and outcomes tracking</strong></td>
<td><strong>Primary Care Providers (PCP)</strong>: Empowering language, No Red Flags, no imaging, Risk severity measure</td>
</tr>
<tr>
<td></td>
<td><strong>Primary Spine Practitioner (PSP)</strong>: Motivational interviewing with psycho social screening, “Multidisciplinary” exam</td>
</tr>
<tr>
<td></td>
<td><strong>High Performing Network (HPN)</strong>: “Fast Track” criteria, Consultation and communication on difficult cases</td>
</tr>
<tr>
<td><strong>2. Pathway Guided Stepped Care</strong></td>
<td><strong>Primary Care Providers (PCP)</strong>: Treat low complexity, Emphasize patient active care, Pathway based referrals</td>
</tr>
<tr>
<td></td>
<td><strong>Primary Spine Practitioner (PSP)</strong>: Minimally invasive, patient active care plan, Modify per psychosocial screening, Modify treatment if no/slow improvement (~2 weeks)</td>
</tr>
<tr>
<td></td>
<td><strong>High Performing Network (HPN)</strong>: Patients not improving or “flagged” getting quick referral, Testing, treatment, referral according to evidence-based pathway</td>
</tr>
</tbody>
</table>
HIGH PERFORMING NETWORK/“Fast Track”

- PRIMARY CARE
- URGENT CARE
- PAIN INTERVENTIONIST
- PRIMARY SPINE PRACTITIONER
- PSYCHIATRIST
- PRIMARY SPINE SPECIALIST
- Neurologist
- Spine Surgeon
- Physiatry / Rehab
Enhanced Relationships and Momentum

• Primary Care Practitioners (PCPs)
  – Satisfied patients
  – More PCP choice (off load to “extender”)
  – Less PCP work (simple pathway)
  – Time to focus on clinical strengths

• Specialists
  – More appropriate case mix

• Primary Spine Practitioners (PSPs)
  – Integration
  – Exposure (new patient volume)
  – Goal: value based reimbursement

• Employers
  – Direct costs
  – Productivity and indirect costs

• Communities
  – Culture change
  – Common language
Primary Care Physician Comments

• The spine program has **improved access** to care, **enhanced the quality** of evaluation and treatment, and markedly **improved the patient care experience**. At the same time, its presence is **reducing costs** associated with high-priced specialty care and imaging while **improving outcomes**.

• It has made **my work** of caring for those with neck and back pain **much simpler and more satisfying**.
  - Robert Cole, MD, Medical Director, LHMG

• “My patients have found our spine program to be very helpful. They have been surprised by the **thoroughness and completeness of the evaluations and treatment recommendations** they have received.”

• “Our two PSP’s are very willing to work with us as **partners** in the treatment of our patients.”
  - Mark Cohen, MD, Associate Medical Director, LHMG

Excellus
90 minutes can make a big difference!

A short training, a PSP infrastructure, some big savings and a journal submission

“pilot achieved a 28 percent reduction in costs for the treatment of back pain in 12 months. The control group actually saw an 8 percent increase in costs”
a pilot program run by Excellus BlueCross BlueShield found that educating doctors about a restrained approach to back pain was paying off for patients and the bottom line. “Imaging, visits to specialists or the emergency room, surgery, opioid prescribing, and costs all decreased, while patient satisfaction went up.”
Project ECHO™ ~ Extension for Community Healthcare Outcomes

- Lifelong learning model developed at U. New Mexico (Hep C)
- The heart of the ECHO model™ is its hub-and-spoke knowledge-sharing networks, led by expert teams who use multi-point video-conferencing to conduct virtual clinics with community providers
- By putting local clinicians together with specialist teams in virtual clinics, Project ECHO shares knowledge and expands treatment capacity
- The result: better care for more people
- Excellus BCBS – first insurer to co-ordinate and host an ECHO (MAT)
- Engage community partners
The Spine Health Program: Springboard to Wellness? Reproducible Pathway Model?

<table>
<thead>
<tr>
<th>Category</th>
<th>Current # of Members</th>
<th>Prior</th>
<th>Current</th>
<th>Comparison</th>
<th>Current vs Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back Pain</td>
<td>161</td>
<td>12.1%</td>
<td>11.7%</td>
<td>12.9%</td>
<td>less</td>
</tr>
<tr>
<td>Hypertension</td>
<td>144</td>
<td>10.0%</td>
<td>10.5%</td>
<td>9.9%</td>
<td>more</td>
</tr>
<tr>
<td>Cholesterol Disorders</td>
<td>138</td>
<td>11.3%</td>
<td>10.0%</td>
<td>9.4%</td>
<td>more</td>
</tr>
<tr>
<td>Depression and Anxiety</td>
<td>114</td>
<td>7.7%</td>
<td>8.3%</td>
<td>7.9%</td>
<td>more</td>
</tr>
<tr>
<td>Cancer</td>
<td>83</td>
<td>5.7%</td>
<td>6.0%</td>
<td>7.2%</td>
<td>less</td>
</tr>
<tr>
<td>Diabetes</td>
<td>65</td>
<td>4.4%</td>
<td>4.7%</td>
<td>4.6%</td>
<td>more</td>
</tr>
<tr>
<td>Ischemic Heart Disease</td>
<td>34</td>
<td>2.5%</td>
<td>2.5%</td>
<td>1.8%</td>
<td>more</td>
</tr>
<tr>
<td>Asthma</td>
<td>34</td>
<td>3.2%</td>
<td>2.5%</td>
<td>3.1%</td>
<td>less</td>
</tr>
<tr>
<td>Pregnancy and Childbirth</td>
<td>32</td>
<td>1.6%</td>
<td>2.3%</td>
<td>3.0%</td>
<td>less</td>
</tr>
<tr>
<td>COPD</td>
<td>14</td>
<td>0.9%</td>
<td>1.0%</td>
<td>1.1%</td>
<td>less</td>
</tr>
<tr>
<td>CHF</td>
<td>7</td>
<td>0.5%</td>
<td>0.5%</td>
<td>0.4%</td>
<td>more</td>
</tr>
</tbody>
</table>
Engaging Patients in the Decision

Do I Need an MRI Scan?

• Usually not recommended Usually not recommended
• Abnormalities shown on the MRI scan are often not actually be the cause of back pain.
• Numerous studies have shown that approximately 30% of people in their thirties and forties have a lumbar disc herniation on their MRI scan, although they do not have any back pain. There are many such normal findings that can sound scary.

Indications for when to get an MRI scan include:

• After 4 to 6 weeks of leg pain, if the pain is severe enough to warrant surgery
• After 3 to 6 months of back pain, if the pain is severe enough to warrant surgery
• If the back pain is accompanied by constitutional symptoms (such as loss of appetite, weight loss, fever, chills, shakes, or severe pain when at rest) that may indicate that the pain is due to a tumor or an infection
• Persistent unrelenting back pain not changed by body position. (No position makes it better or worse)
• For patients who may have spinal stenosis and are considering an epidural injection to alleviate pain
• For patients who have not done well after having back surgery, specifically if their pain does not improve after 4 to 6 weeks.

Another important consideration with MRI scans is the timing of when the scan is done. The only time an MRI scan is needed immediately is when a patient has either:

• Bowel or bladder incontinence
• Progressive weakness in the legs due to nerve damage.

Early and inappropriate ordering of MRI scans can prolong your recovery by common misinterpretation of normal findings, driving needless clinical testing and possibly unnecessary treatment that have inherent risks.

Do I Need an Opioid Prescription?

• Opioid-based analgesics are reserved for short-term use following a severe injury, illness, or surgery
• Opioids are prescribed too often
• Chronic pain is one of the most common reasons people see their health care provider. However, for most types of chronic pain, opioids should only be used as a last resort
• Short-term use of these medicines may help. But there is no proof that they work well over time. Long-acting or extended-release opioids are rarely appropriate.

If you have moderate to severe back pain or neck pain expect your physician to use other pain treatments that work better and have fewer risks.

• Over-the-counter medicines:
  o Acetaminophen (Tylenol® and generic)
  o Ibuprofen (Advil®, Motrin®IB®, and generic)
  o Naproxen (Aleve® and generic)
  o Topical non-steroidal anti-inflammatory drugs (NSAIDs):
    o Heat rubs
• Non-Drug treatments:
  o Exercise/activity
  o Self-treatment methods
  o Manual therapies (spinal manipulation)
  o Massage therapy/ Acupuncture
  o Cognitive behavioral therapy
  o Injections (such as steroids)

• Other prescription drugs:
  o Non-steroidal anti-inflammatory drugs (NSAIDs)
  o Anti-seizure drugs
  o Glutaminoids
  o Antidepressants

An opioid is only considered to be an effective treatment if you have exhausted all other viable medication and non-medication options.

Before your doctor prescribes an opioid pain reliever, he/she will likely evaluate your current medical condition by performing a physical and neurological examination. The assessment focuses on your pain—including the location, intensity, frequency, and treatments you’ve tried.

Potential Side Effects of Opioids

• Constipation
• Drowsiness
• Itching
• Nausea
• Vomiting
• Chemical dependence
• It’s quite common for people to develop a tolerance to opioids, which requires increasing the dose to help deliver better pain relief.
• “Rebound” - increased severity of pain
• Overdose
• Death.
Consumerism and the Amazon Effect: 
Judging Practitioners

Quality Data / Cost Data
....and this is good for quality practitioners

Opinion and anecdote (How many stars?)
....risky and possibly misleading

Best if consumer information has meaningful data agreed upon by patients, providers and payers
Spine Health Program Overview

• Better Outcomes
• Happy Patients
• Less Cost

• Less PCP work (simple pathway)
• More PCP choice (off load to “extender”)

• The importance of “first touch”
• Changing the ‘culture’ of spine care
Should Kansas BCBS Implement a Spine Health Program?

- Interest in the Spine Care Pathway
- Voluntary pathway training
- Tool and best practice sharing
- Data share (registry?)
- Team development
- Patient education tools
- Aligned incentives (patients and providers)

- Reimbursement incentive (QBRP for Data Registry, 28 day LBP X-ray HEDIS Measure)
Thoughts?
Questions?

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